

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No. : 10/586,024  
Applicant(s) : Matthew T. Pretz, et al.  
Examiner : Tam M. Nguyen  
Filed : 07/14/2006  
Title : Process for the Preparation of Hydrogenated Hydrocarbon Compounds  
Confirmation No. : 1125  
Group Art Unit : 1797  
Docket No. : 62829A  
Customer No. : 00109

**Declaration Under 37 C.F. R. § 1.132**

The undersigned, Richard A. Pierce, citizen of the United States of America and residing in the State of Texas, United States of America declare and say that:

1. I am a 1976 graduate of Southwestern University, Georgetown, Texas with a Bachelor of Science degree in Chemistry, a 1981 graduate of the University of North Texas, Denton, Texas with a Doctor of Philosophy Degree in Organic Chemistry.

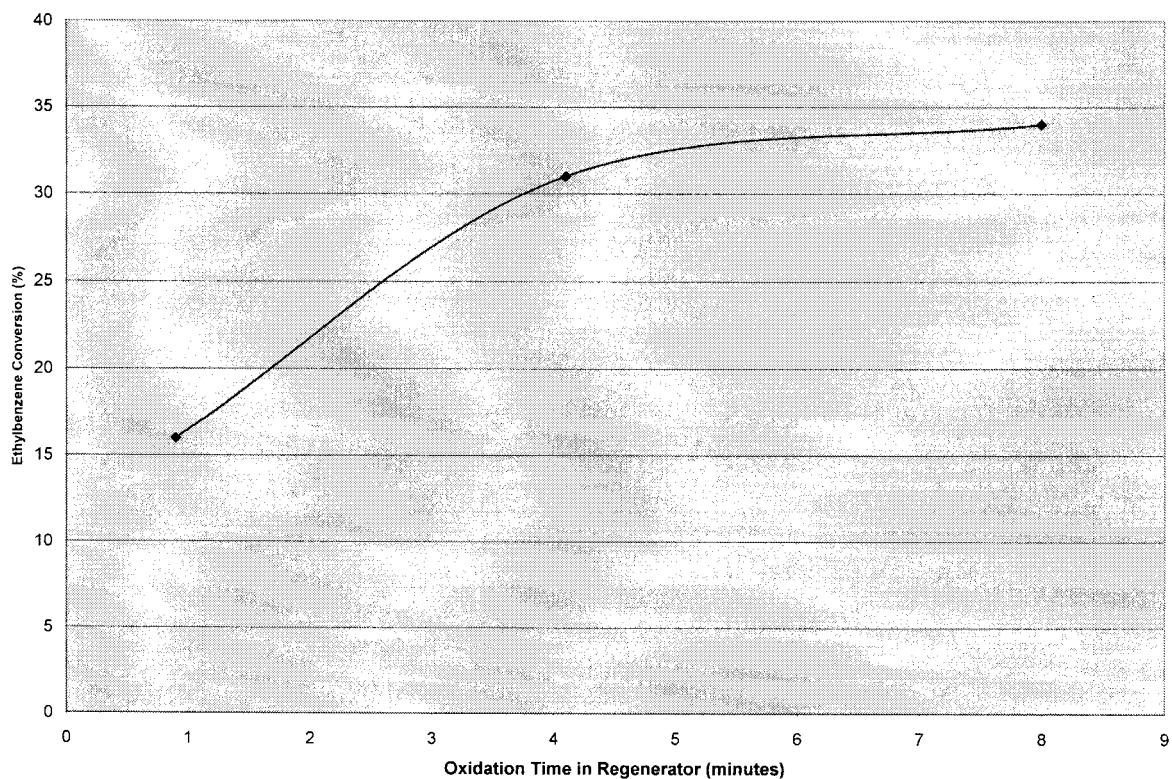
2. I have been employed by The Dow Chemical Company for 28 years, including most recently as Senior Research Manager. For approximately the last 20 years, I have worked in the area of hydrocarbon process development, including two processes for the manufacturing styrene. I have also been responsible for catalyst development for hydrocarbon processes, and plant support for process improvements for hydrocarbon processes.

5. I am an inventor on five granted US patents, including US 7,002,052 titled “Integrated Process for Producing an An Alkenyl-Substituted Aromatic Compound”.

6. I have read the above referenced patent application, the Office Action dated November 9, 2009, and the prior art reference, Sanfilippo et al., US 2005/0177016 cited by the Examiner. Sanfilippo states that its invention relates to a reactor-regenerator device, comprising at least one reactor for catalytic dehydrogenation reactions of hydrocarbons

and at least one regenerator of the catalyst of the fast riser type. [0002] As taught by Sanfilippo, the residence time in the catalyst regenerator is less than one minute, and, preferably, less than 30 seconds. [0026] The residence time in the catalyst regenerator includes, in addition to oxidation time, also time for combustion.

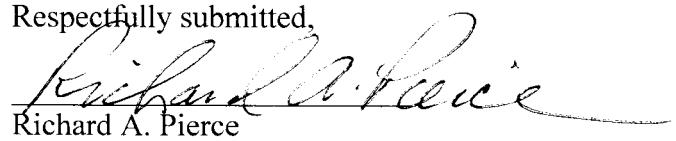
7. I was a member of the technical steering team for the project involving the claimed invention. In that capacity, I supervised the Dow personnel performing experiments which Dow performed in a pilot scale plant that demonstrated that catalyst activity, as measured by ethylbenzene conversion, is improved by longer oxidation time in the regenerator. Furthermore, the graph shown below indicates that oxidation times in a regenerator consistent with the Sanfilippo patent would result in a catalyst with inferior catalyst activity as compared to a catalyst having experienced the longer oxidation time in a fluid bed catalyst regenerator.



8. I declare further that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title

18 of the United States Code, and that willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted,

  
Richard A. Pierce